



# SEQUENCE LISTING

<110> SHEFFIELD, VAL C.  
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PATIL, SHIVA

<120> THERAPEUTICS AND DIAGNOSTICS FOR CONGENITAL HEART  
DISEASE BASED ON A NOVEL HUMAN TRANSCRIPTION FACTOR

RECEIVED

<130> IOWA:042USD1

OCT 31 1992

<140> 09/612,809

<141> 2000-07-10

TECH CENTER 1000 21 10

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<170> PatentIn Ver. 2.1

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<211> 2284

<212> DNA

<213> Homo sapiens

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<210> 2

<211> 553

<212> PRT

<213> Homo sapiens

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 20 25 30

Ala Gly Gly Gly Tyr Thr Ala Met Pro Ala Pro Met Ser Val Tyr Ser  
 35 40 45

His Pro Ala His Ala Glu Gln Tyr Pro Gly Gly Met Ala Arg Ala Tyr  
 50 55 60

Gly Pro Tyr Thr Pro Gln Pro Gln Pro Lys Asp Met Val Lys Pro Pro  
 65 70 75 80

Tyr Ser Tyr Ile Ala Leu Ile Thr Met Ala Ile Gln Asn Ala Pro Asp  
 85 90 95

Lys Lys Ile Thr Leu Asn Gly Ile Tyr Gln Phe Ile Met Asp Arg Phe  
 100 105 110

Pro Phe Tyr Arg Asp Asn Lys Gln Gly Trp Gln Asn Ser Ile Arg His  
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405 410 415

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420 425 430

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Ala Phe Val Tyr Asp Cys Ser Lys Phe  
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<210> 3

<211> 1662

<212> DNA

<213> Homo sapiens

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<210> 4

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
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<400> 4

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Met Ala Ile Gln Asn Ala Pro Asp Lys Lys Ile Thr Leu Asn Gly Ile
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Tyr Gln Phe Ile Met Asp Arg Phe Pro Phe Tyr Arg Asp Asn Lys Gln
    35                      40                     45

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Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu Cys Phe
    50                      55                     60

```

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Val Lys Val Pro Arg Asp Asp Lys Lys Pro Gly Lys Gly Ser Tyr Trp
    65                      70                     75                     80

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Thr Leu Asp Pro Asp Ser Tyr Asn Met Phe Glu Asn Gly Ser Phe Leu  
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Arg Arg Arg Arg Arg Phe Lys Lys Lys Asp  
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<210> 5

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 5

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Met Ala Ile Gln Asn Ala Pro Glu Lys Lys Ile Thr Leu Asn Gly Ile  
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Tyr Gln Phe Ile Met Asp Arg Phe Pro Phe Tyr Arg Glu Asn Lys Gln  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu Cys Phe  
50 55 60

Val Lys Val Pro Arg Asp Asp Lys Lys Pro Gly Lys Gly Ser Tyr Trp  
65 70 75 80

Thr Leu Asp Pro Asp Ser Tyr Asn Met Phe Glu Asn Gly Ser Phe Leu  
85 90 95

Arg Arg Arg Arg Arg Phe Lys Lys Lys Asp  
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<210> 6

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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1 5 10 15

Met Ala Ile Gln Ser Ser Pro Gly Gln Arg Ala Thr Leu Ser Gly Ile  
20 25 30

Tyr Arg Val Ile Met Gly Arg Phe Ala Phe Tyr Arg His Asn Arg Pro  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu Cys Phe  
50 55 60

Val Lys Val Pro Arg Asp Asp Arg Lys Pro Gly Lys Gly Ser Tyr Trp  
65 70 75 80

Thr Leu Asp Pro Asp Cys His Asp Met Phe Glu His Gly Ser Phe Leu  
85 90 95

Arg Arg Arg Arg Arg Phe Thr Arg Gln Thr  
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<210> 7

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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20 25 30

Tyr Gln Phe Ile Met Asp Arg Phe Pro Phe Tyr His Asp Asn Arg Gln  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Asp Cys Phe  
50 55 60

Val Lys Val Pro Arg Glu Lys Gly Arg Pro Gly Lys Gly Ser Tyr Trp  
65 70 75 80

Thr Leu Asp Pro Arg Cys Leu Asp Met Phe Glu Asn Gly Asn Tyr Arg  
85 90 95

Arg Arg Lys Arg Lys Pro Lys Pro Gly Pro  
100 105

<210> 8

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Pro Leu Gln Arg Gly Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala  
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Met Ala Leu Ala His Ala Pro Gly Arg Arg Leu Thr Leu Ala Ala Ile  
20 25 30

Tyr Arg Phe Ile Thr Glu Arg Phe Ala Phe Tyr Arg Asp Ser Pro Arg  
35 40 45

Lys Trp Gln Asn Ser Ile Arg His Asn Leu Thr Leu Asn Asp Cys Phe  
50 55 60

Val Lys Val Pro Arg Glu Pro Gly Asn Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Thr Leu Asp Pro Ala Ala Ala Asp Met Phe Asp Asn Gly Ser Phe Leu  
85 90 95

Pro Arg Arg Lys Arg Phe Lys Arg Ala Glu  
100 105

<210> 9

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Pro Leu Gln Arg Gly Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala  
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Met Ala Ile Ala His Ala Pro Glu Arg Arg Leu Thr Leu Gly Gly Ile  
20 25 30

Tyr Lys Phe Ile Thr Glu Arg Phe Pro Phe Tyr Arg Asp Asn Pro Lys  
35 40 45

Lys Trp Gln Asn Ser Ile Arg His Asn Leu Thr Leu Asn Asp Cys Phe  
50 55 60

Leu Lys Ile Pro Arg Glu Ala Gly Arg Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Ala Leu Asp Pro Asn Ala Glu Asp Met Phe Glu Ser Gly Ser Phe Leu  
85 90 95

Arg Arg Arg Lys Arg Phe Lys Arg Ser Asp  
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<210> 10

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Ala Arg Gln Pro Ala Lys Pro Pro Ser Ser Tyr Ile Ala Leu Ile Thr  
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Met Ala Ile Leu Gln Ser Pro His Lys Arg Leu Thr Leu Ser Gly Ile  
20 25 30

Cys Ala Phe Ile Ser Asp Arg Phe Pro Tyr Tyr Arg Arg Lys Glu Pro  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Asp Cys Phe  
50 55 60

Val Lys Ile Pro Arg Glu Pro Gly Arg Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Ser Leu Asp Pro Ala Ser Gln Asp Met Phe Asp Asn Gly Ser Phe Leu  
85 90 95

Arg Arg Arg Lys Arg Phe Gln Arg Asn Gln  
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<211> 106  
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<223> Description of Artificial Sequence: Synthetic  
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Arg Thr Arg Leu Val Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Thr  
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Met Ala Ile Leu Gln Ser Pro Lys Lys Arg Leu Thr Leu Ser Glu Ile  
20 25 30

Cys Glu Phe Ile Ser Gly Arg Phe Pro Tyr Tyr Arg Glu Lys Phe Pro  
35 40 45

Ala Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Asp Cys Phe  
50 55 60

Val Lys Ile Pro Arg Glu Pro Gly Asn Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Thr Leu Asp Pro Glu Ser Ala Asp Met Phe Asp Asn Gly Ser Phe Leu  
85 90 95

Arg Arg Arg Lys Arg Phe Lys Arg Gln Pro  
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<211> 106  
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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Arg Ser Pro Leu Val Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Thr  
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Met Ala Ile Leu Gln Ser Pro Lys Lys Arg Leu Thr Leu Ser Glu Ile  
20 25 30

Cys Glu Phe Ile Ser Gly Arg Phe Pro Tyr Tyr Arg Glu Lys Phe Pro  
35 40 45

Ala Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Asp Cys Phe  
50 55 60

Val Lys Ile Pro Arg Glu Pro Gly Asn Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Thr Leu Asp Pro Glu Ser Ala Asp Met Phe Asp Asn Gly Ser Phe Leu  
85 90 95

Arg Arg Lys Arg Arg Phe Lys Arg Gln Pro  
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<210> 13

<211> 106

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Ile Arg Arg Pro Glu Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Val  
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Met Ala Ile Gln Ser Ser Pro Thr Lys Arg Leu Thr Leu Ser Glu Ile  
20 25 30

Tyr Gln Phe Leu Gln Ser Arg Phe Pro Phe Phe Arg Gly Ser Tyr Gln  
35 40 45

Gly Trp Lys Asn Ser Val Arg His Asn Leu Ser Leu Asn Glu Cys Phe  
50 55 60

Ile Lys Leu Pro Lys Gly Leu Gly Arg Pro Gly Lys Gly His Tyr Trp  
65 70 75 80

Thr Ile Asp Pro Ala Ser Glu Phe Met Phe Glu Asn Gly Ser Phe Arg  
85 90 95

Arg Arg Arg Arg Gly Phe Arg Arg Lys Cys  
100 105

<210> 14  
<211> 106  
<212> PRT  
<213> Artificial Sequence

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Peptide

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20 25 30

Tyr Gln Phe Leu Gln Ala Arg Phe Pro Phe Phe Arg Gly Ala Tyr Gln  
35 40 45

Gly Trp Lys Asn Ser Val Arg His Asn Leu Ser Leu Asn Glu Cys Phe  
50 55 60

Ile Lys Leu Pro Lys Gly Leu Gly Arg Pro Gly Lys Gly His Tyr Trp  
65 70 75 80

Thr Ile Asp Pro Ala Ser Glu Phe Met Phe Glu Asn Gly Ser Phe Arg  
85 90 95

Arg Arg Arg Arg Gly Phe Arg Arg Lys Cys  
100 105

<210> 15  
<211> 106  
<212> PRT  
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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Asn Gly Lys Tyr Glu Lys Pro Pro Phe Ser Tyr Asn Ala Leu Ile Met  
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Met Ala Ile Arg Gln Ser Pro Glu Lys Arg Leu Thr Leu Asn Gly Ile  
20 25 30

Tyr Glu Phe Ile Met Lys Asn Phe Pro Tyr Tyr Arg Glu Asn Lys Gln  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Lys Cys Phe  
50 55 60

Val Lys Val Pro Arg His Tyr Asp Asp Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Met Leu Asp Pro Ser Ser Tyr Asp Asp Val Ile Gly Gly Thr Thr Gly  
85 90 95

Lys Leu Arg Arg Arg Ser Thr Thr Ser Pro  
100 105

<210> 16

<211> 106

<212> PRT

<213> Artificial Sequence

<400> 16

Asn Gly Lys Tyr Glu Lys Pro Pro Phe Ser Tyr Asn Ala Leu Ile Met  
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Met Ala Met Arg Gln Ser Pro Glu Lys Arg Leu Thr Leu Asn Gly Ile  
20 25 30

Tyr Glu Phe Ile Met Lys Asn Phe Pro Tyr Tyr Arg Glu Asn Lys Gln  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Lys Cys Phe  
50 55 60

Val Lys Val Pro Arg His Tyr Asp Asp Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80

Met Leu Asp Pro Ser Ser Tyr Asp Asp Val Ile Gly Gly Thr Thr Gly  
85 90 95

Lys Leu Arg Arg Ser Thr Thr Ser Pro Ala

100

105

&lt;210&gt; 17

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
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20 25 30Tyr Glu Phe Ile Met Lys Asn Phe Pro Tyr Tyr Arg Glu Asn Lys Gln  
35 40 45Gly Trp His Asn Ser Ile Arg Asp Asn Leu Ser Leu Asn Lys Cys Phe  
50 55 60Val Lys Val Pro Arg His Tyr Asp Asp Pro Gly Lys Gly Asn Tyr Trp  
65 70 75 80Met Leu Asp Pro Ser Ser Asp Asp Val Phe Ile Gly Gly Thr Thr Gly  
85 90 95Lys Leu Arg Arg Arg Ser Thr Thr Ser Arg  
100 105

&lt;210&gt; 18

&lt;211&gt; 76

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
Peptide

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Leu Met Lys Leu Val Arg Pro Pro Tyr Ser Tyr Ser Ala Leu Ile Ala  
1 5 10 15

Met Ala Ile His Gly Ala Pro Asp Lys Arg Leu Thr Leu Ser Gln Ile  
20 25 30

Tyr Gln Tyr Val Ala Asp Asn Phe Pro Phe Tyr Asn Lys Ser Lys Ala  
35 40 45

Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Asp Cys Phe  
50 55 60

Lys Lys Val Pro Arg Asp Glu Asp Asp Pro Gly Lys  
65 70 75

<210> 19

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

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20 25 30

Tyr Lys Trp Ile Thr Asp Asn Phe Cys Tyr Phe Arg His Ala Asp Pro  
35 40 45

Thr Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Lys Cys Phe  
50 55 60

Ile Lys Val Pro Arg Glu Lys Asp Glu Pro Gly Lys Gly Gly Phe Trp  
65 70 75 80

Arg Ile Asp Pro Gln Tyr Ala Glu Arg Leu Leu Ser Gly Ala Phe Lys  
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Lys Arg Arg Leu Pro Phe Val His Ile His  
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<210> 20

<211> 98

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
Peptide

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Ser Ala Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val  
20 25 30

Lys Ser Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala  
35 40 45

Gly Trp Gln Lys Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe  
50 55 60

Ile Arg Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu  
65 70 75 80

Asn Pro Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Ala Ala Ser  
85 90 95

Met Asp